EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

QAPP/FSP/SAP for: *(check appropriate box)* ☐ **GRANTEE** ☐ **CONTRACTOR** ☐ **EPA** ☐ **Other**	**Entity** *(grantee, contract, EPA AO, EPA Program, Other)* Sunnyside Gold Corporation	**Regulatory Authority** **and/or** **Funding Mechanism**	___**40 CFR 31 for Grants** ___**48 CFR Part 46 for Contracts** ___ **Interagency Agreement** ___ **EPA Administrative Order** ___ **EPA Program Funding** ___ **EPA Program Regulation** ___ **EPA CIO 2105**
Document Title *[Note: Title will be repeated in Header]*	Surface Water, Groundwater, and Solid Phase Media Investigation Work Plan – Mayflower Mill and Tailings Impoundments Area		
QAPP/FSP/SAP Preparer	Formation Environmental		
Period of Performance *(of QAPP/FSP/SAP)*	**2015**	**Date Submitted for Review**	
EPA Project Officer **EPA Project Manager**		**PO Phone #** **PM Phone #**	
QA Program Reviewer or Approving Official		**Date of Review**	

Documents to Review:

1. QAPP written by Grantee or EPA must also include for review:
   Work Plan(WP) / Statement of Work (SOW) / Program Plan (PP) / Research Proposal (RP)

2. QAPP written by Contractor must also include for review:
   a) Copy of signed QARF for Task Order
   b) Copy of Task Order SOW
   c) Made available hard or electronic copy of approved QMP
   d) If QMP not approved, provide Contract SOW

3. For a Field Sampling Plan (FSP) or Sampling & Analyses Plan (SAP), the Project QAPP must also be provided.
   OR
   The FSP or SAP must be clearly identified as a stand-alone QA document and must contain all QAPP required elements (Project Management, Data Generation/Acquisition, Assessment and Oversight, and Data Validation and Usability).

Documents Submitted for QAPP Review:

1. QA Document(s) submitted for review:

QA Document	Document Date	Document Stand-alone	Document with QAPP
QAPP		Yes / No	
FSP		Yes / No	Yes / No
SAP		Yes / No	Yes / No
SOP(s)			Yes / No

2. WP/SOW/TO/PP/RP Date _____
WP/SOW/TO/RP Performance Period _____

3. QA document consistent with the:
WP/SOW/PP for grants? Yes / No
SOW/TO for contracts? Yes / No

4. QARF signed by R8 QAM Yes / No / NA
Funding Mechanism IA / contract / grant / NA
Amount _____

Summary of Comments *(highlight significant concerns/issues)*:

1. Comment #1
2. Comment #2
3. Comment #3
4. **The** Sunnyside Gold Corporation **must address the comments in the Summary of Comments, as well as those identified in the Comment section(s) that**

Element	Acceptable *Yes/No/NA*	Page/ Section	Comments
includes a "Response (date)" and Resolved (date)".			
A. Project Management			
A1. Title and Approval Sheet			
a. Contains project title	Yes	Title	
b. Date and revision number line (for when needed)	Yes	Title	No revision number line
c. Indicates organization=s name	Yes	Title	
d. Date and signature line for organization=s project manager	No		
e. Date and signature line for organization=s QA manager	No		
f. Other date and signatures lines, as needed			
A2. Table of Contents			
a. Lists QA Project Plan information sections	Yes	TOC	
b. Document control information indicated	Yes	TOC	
A3. Distribution List			
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization	No		
A4. Project/Task Organization			
a. Identifies key individuals involved in all major aspects of the project, including contractors	Yes	Section 2.3	QAPP
b. Discusses their responsibilities	Yes	Section 2.3	QAPP
c. Project QA Manager position indicates independence from unit generating data	Yes	Section 2.3	QAPP
d. Identifies individual responsible for maintaining the official, approved QA Project Plan	Yes	Section 2.3	QAPP
e. Organizational chart shows lines of authority and reporting responsibilities	No		
A5. Problem Definition/Background			
a. States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	Yes	Section 2.1	QAPP
b. Clearly explains the reason (site background or historical context) for initiating this project	Yes	Section 2.1	QAPP; also section 1 of Surface Water, Groundwater, and Solid Phase Media Investigation Work Plan – Mayflower Mill and Tailings Impoundments area (Work Plan).

c. Identifies regulatory information, applicable criteria, action limits, etc. necessary to the project	Yes	Table 4-4 Work Plan	Criteria (CDPHE water quality standard) for zinc, cadmium and manganese. See footnote 11 in table – refers to Table 5-2 for explanation for choice of criteria displayed. There is no Table 5-2 in SAP or QAPP
A6. Project/Task Description			
a. Summarizes work to be performed, for example, measurements to be made, data files to be obtained, etc., that support the project=s goals	Yes	Work Plan Section 4.0	
b. Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as sampling, analysis, data or file reviews, and assessments	Yes	Work Plan Section 4.0	
c. Details geographical locations to be studied, including maps where possible	Yes	Work Plan Figures 1-1, 1-2, 4-1, 4-2	
d. Discusses resource and time constraints, if applicable	N/A		
A7. Quality Objectives and Criteria			
a. Identifies - performance/measurement criteria for all information to be collected and acceptance criteria for information obtained from previous studies, - including project action limits and laboratory detection limits and - range of anticipated concentrations of each parameter of interest	Yes – last bullet not addressed	Tables A2-2-A2-6; Tables A3-2 – A3-3	QAPP; range of anticipated concentrations of each parameter of interest not addressed.
b. Discusses precision	Yes	QAPP pp 5-6	
c. Addresses bias	Yes	QAPP pp 6-8	
d. Discusses representativeness	Yes	QAPP pp 7-8	
e. Identifies the need for completeness	Yes	QAPP pp 7-8	
f. Describes the need for comparability	Yes	QAPP pp 7-8	
g. Discusses desired method sensitivity	Yes	QAPP Table A3-3	
A8. Special Training/Certifications			
a. Identifies any project personnel specialized training or certifications	Yes	QAPP p 8	
b. Discusses how this training will be provided	Yes	QAPP p 8	

c. Indicates personnel responsible for assuring training/certifications are satisfied	Yes	QAPP p 8	
d. identifies where this information is documented	No		
A9. Documentation and Records			
a. Identifies report format and summarizes all data report package information	Yes	QAPP Section 2.6	
b. Lists all other project documents, records, and electronic files that will be produced	Yes	QAPP pp 9-11	
c. Identifies where project information should be kept and for how long	Yes	QAPP p 10	Doesn't state how long records will be retained
d. Discusses back up plans for records stored electronically	No		Couldn't find this information in Section 2.6 (QAPP)
e. States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this	No		Did not find a list as described in A3
B. Data Generation/Acquisition			
B1. Sampling Process Design (Experimental Design)			
a. Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample	Yes	Work Plan section 1.0	
b. Details the type and total number of sample types/matrix or test runs/trials expected and needed	Yes	Work Plan sections 3.0, 4.0; Tables 4-2, 4-4, 4-5; Figure 4-1	
c. Indicates where samples should be taken, how sites will be identified/located	Yes	Work Plan section 4.0; Tables 4-2, 4-4, 4-5; Figure 4-1	
d. Discusses what to do if sampling sites become inaccessible	Yes	Work Plan section 4.0	No specifics, mentions iterative methodology that allows for modification of SAP as warranted by site conditions
e. Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.	Yes	Work Plan section 1.0	Identifies time of events as summer and fall of 2015
f. Specifies what information is critical and what is for informational purposes only	No		Could not find this distinction

g. Identifies sources of variability and how this variability should be reconciled with project information	Yes	Work Plan Section 3.5	
B2. Sampling Methods			
a. Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken	Yes	Work Plan Appendix B	
b. Indicates how each sample/matrix type should be collected	Yes	Work Plan Appendix B	
c. If in situ monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data	N/A		
d. If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages	N/A		
e. Indicates how samples are to be homogenized, composited, split, or filtered, if needed	Yes	Work Plan Appendix B	
f. Indicates what sample containers and sample volumes should be used	Yes	QAPP pp. 16-17; Table A3-1	
g. Identifies whether samples should be preserved and indicates methods that should be followed	Yes	QAPP p. 16; Table A3-1	
h. Indicates whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of	Yes	QAPP p. 13; SOPs #3 and #7	
i. Identifies any equipment and support facilities needed	Yes	Work Plan Appendix B	
j. *Addresses actions to be taken when problems occur*, identifying individual(s) responsible for corrective action and how this should be documented	Yes to first part	QAPP Section 4.0, Tables A2-2-A2-5.	
B3. Sample Handling and Custody			
a. States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for in-situ or continuous monitoring, the maximum time before retrieval of information	Yes	Workplan Tables 4-1 – 4-3; QAPP pp 16-17, Table A3-1	

b. Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)	Yes	QAPP pp 17-17, Table A3-1; SOP#2	
c. Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible	Yes	QAPP section 3.2.2; SOP #2	
d. Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan	Yes	Work Plan section 4.2	
e. Identifies chain-of-custody procedures and includes form to track custody	Yes	QAPP Section 3.2.2 pp 17-18	No form included
B4. Analytical Methods			
a. Identifies all analytical SOPs (field, laboratory and/or office) that should be followed by number, date, and regulatory citation, indicating options or modifications to be taken, such as sub-sampling and extraction procedures	N/A		Analytical methods to be used are given in Tables 4-1 – 4-3 in Work Plan. Samples will be analyzed by contract laboratory ACZ and specific SOPs were not provided with this Work Plan.
b. Identifies equipment or instrumentation needed	N/A		Samples will be analyzed by contract laboratory ACZ and specific SOPs were not provided with this Work Plan.
c. Specifies any specific method performance criteria	N/A		Samples will be analyzed by contract laboratory ACZ and specific SOPs were not provided with this Work Plan.
d. Identifies procedures to follow when failures occur, identifying individual responsible for corrective action and appropriate documentation	N/A		Samples will be analyzed by contract laboratory ACZ and specific SOPs were not provided with this Work Plan.
e. Identifies sample disposal procedures	N/A		Samples will be analyzed by contract laboratory ACZ and specific SOPs were not provided with this Work Plan.
f. Specifies laboratory turnaround times needed	N/A		Samples will be analyzed by contract laboratory ACZ and specific SOPs were not provided with this Work Plan. Holding times are provided in Work Plan tables but not required turnaround times.
g. Provides method validation information and SOPs for nonstandard methods	N/A		Samples will be analyzed by contract laboratory ACZ and specific SOPs were not provided with this Work Plan.
B5. Quality Control			
a. For each type of sampling, analysis, or measurement technique, identifies QC activities which should be used, for example, blanks, spikes, duplicates, etc., and at what frequency	Yes	QAPP Table A3-4; Table A3-5	

b. Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented	Yes	QAPP Section 3.4	
c. Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data	Yes	QAPP Table A2-1	
B6. Instrument/Equipment Testing, Inspection, and Maintenance			
a. Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this	Yes	QAPP Appendix B	
b. Identifies testing criteria	Yes	QAPP Appendix B	
c. Notes availability and location of spare parts	Yes	QAPP Appendix B	
d. Indicates procedures in place for inspecting equipment before usage	Yes	QAPP Appendix B	
e. Identifies individual(s) responsible for testing, inspection and maintenance	Yes	QAPP Appendix B	
f. Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of corrective action determined and documented	Yes	QAPP Appendix B	
B7. Instrument/Equipment Calibration and Frequency			
a. Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration	Yes	QAPP Appendix B	
b. Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment	Yes	QAPP Appendix B	
c. Identifies how deficiencies should be resolved and documented	Yes	QAPP Appendix B	
B8. Inspection/Acceptance for Supplies and Consumables			
a. Identifies critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials	Yes	QAPP p 25	
b. Identifies the individual(s) responsible for this	No		
B9. Use of Existing Data (Non-direct Measurements)			

a. Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used	Yes	QAPP p 25	*Not in this work plan; text refers to the Subsurface Investigation Work Plan (Formation Environmental 2015) for information for B9*
b. Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	N/A		*Not in this work plan; text refers to the Subsurface Investigation Work Plan (Formation Environmental 2015) for information for B9*
c. Indicates the acceptance criteria for these data sources and/or models	N/A		*Not in this work plan; text refers to the Subsurface Investigation Work Plan (Formation Environmental 2015) for information for B9*
d. Identifies key resources/support facilities needed	N/A		*Not in this work plan; text refers to the Subsurface Investigation Work Plan (Formation Environmental 2015) for information for B9*
e. Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing	N/A		*Not in this work plan; text refers to the Subsurface Investigation Work Plan (Formation Environmental 2015) for information for B9*
B10. Data Management			
a. Describes data management scheme from field to final use and storage	Yes	QAPP section 3.8	
b. Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs	Yes	QAPP section 3.8	
c. Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately	Yes	QAPP section 3.8	
d. Identifies individual(s) responsible for this	Yes	QAPP section 3.8	
e. Describes the process for data archival and retrieval	Yes	QAPP section 3.8	
f. Describes procedures to demonstrate acceptability of hardware and software configurations	No		
g. Attaches checklists and forms that should be used	Yes	QAPP Appendix B, individual SOPs	
C. Assessment and Oversight			
C1. Assessments and Response Actions			
a. Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates	Yes	QAPP Section 5.0	

b. Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process	Yes	QAPP Section 5.0	
c. Describes how and to whom assessment information should be reported	Yes	QAPP Section 5.0	
d. Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	Yes	QAPP Section 5.0	
C2. Reports to Management			
a. Identifies what project QA status reports are needed and how frequently	Yes	QAPP Section 5.0	
b. Identifies who should write these reports and who should receive this information	Yes	QAPP Section 5.0	
D. Data Validation and Usability			
D1. Data Review, Verification, and Validation			
Describes criteria that should be used for accepting, rejecting, or qualifying project data	Yes	QAPP section 4.4; Work Plan Appendix B, SOP #20	
D2. Verification and Validation Methods			
a. Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	Yes	QAPP p 28	
b. Identifies who is responsible for verifying and validating different components of the project data/information, for example, chain-of-custody forms, receipt logs, calibration information, etc.	Yes	QAPP p 28	
c. Identifies issue resolution process, and method and individual responsible for conveying these results to data users	Yes	QAPP p 32	
d. Attaches checklists, forms, and calculations	No		
D3. Reconciliation with User Requirements			
a. Describes procedures to evaluate the uncertainty of the validated data	Yes	QAPP Sections 4.4, 4.5 and 4.6	

b. Describes how limitations on data use should be reported to the data users	Yes	QAPP Sections 4.4, 4.5 and 4.6	